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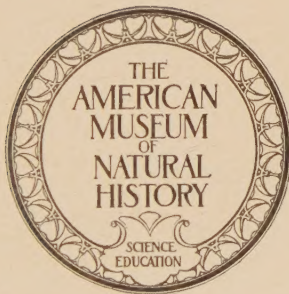
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HARPOONS AND DARTS IN THE STEFÁNSSON COLLECTION

BY

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HARPOONS AND DARTS IN THE STEFÁNSSON COLLECTION.

BY CLARK WISSLER.

PREFACE.

Before setting out for the Arctic again Mr. Stefánsson invited the writer to make a brief study of the archaeological material collected by him in northern Alaska and eastward. Accordingly, advantage was taken of this opportunity to study the distribution of harpoons and darts and to compare the types recognized with those described by Thalbitzer in *Meddelelser om Gronland*, vol. XXXIX.

The following pages by no means exhaust the subject, but seem rather to emphasize further the value of Eskimo archaeology. The Stefánsson collections contain large series of other objects in addition to those described here, all of which will ultimately be presented in full by the distinguished explorer himself. The careful comparative study of these knives, drills, pottery, etc., will give us a clearer insight into the cultural position of the Eskimo.

The next step in the development of this subject is the application of stratigraphic methods. It is hoped that Mr. Stefánsson or some other competent investigator may soon give us a few good cases of stratification in western Eskimo culture.

October, 1916.

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INTRODUCTION.

The preceding report of Mr. Stefánsson and his book *My Life with the Eskimo* contain many archaeological observations and also state the locations and conditions of excavation in the vicinity of Point Barrow and elsewhere. Several thousand specimens were secured, chiefly from northern Alaska. The greater part are from the Point Barrow district, the sites being Birnirk, Cape Smythe, Point Barrow, and Wallapai (see p. 394). In addition there is a small series from Point Hope. From points eastward there are but small series, chiefly because there were no means of transporting large collections. The sites in each case are given in the text.

Our subject is one of peculiar interest not only because the retrieving darts of the Eskimo are truly ingenious inventions but more because in them are to be seen problems of general significance. Though harpoons in particular have from the very first excited the wonder of travelers and been made the subjects of papers by some of our most distinguished anthropologists, no one has yet given us the keen searching analysis of this culture trait necessary to a clear statement of its probable history. Such a study must first of all give a full presentation of geographical distribution and analyze the similarities observed between the various localities. It must also do what many students fear to attempt, seek by mechanical analysis the fundamental ideas from which the present types of implement sprang. Again there is a broader problem, for we have a continuity of distribution in some of these forms, southward into North America and eastward into Asia. In no part of our subject is archaeological investigation of greater moment than in the Arctic, particularly Alaska and the corresponding parts of Siberia, for here is the point of geographical contact between the Old World and the New, the most probable bridge upon which man crossed to the latter. It is not the aim of this paper to deal with these large problems, but to make some small contribution to that end. Its chief justification is that it deals with old materials and in so far is a pioneer contribution to the archaeology of the western Arctic Coast.

No very definite statement as to the relative chronology of the sites enumerated here can be made except for one group. Thus, in the preceding paper (p. 394) Mr. Stefánsson has indicated the probable chronological relations of the Point Barrow sites. Point Barrow, proper, is presumably a modern village since all excavations in old house sites yielded traces of iron implements. Birnirk and Cape Smythe are apparently older and, since the latter yielded traces of fish nets and pipes, it may be considered as the more recent. This would give us a series from oldest to most recent, as follows:

Birnirk, Cape Smythe, Point Barrow. The site of Wallapai (Uallirkpa) is regarded by Stefánsson as contemporaneous with Birnirk and on the whole the collections bear out this assumption. Yet that any of these sites are more than four to five hundred years old is doubtful. The necessary conditions under which the excavations were made rendered careful stratigraphic observations impossible so that even such an estimate of age is futile. We must therefore depend upon future work for light upon this point.

Perhaps it may not be out of place to add that excavations in Arctic lands present special difficulties. Often the ground does not entirely thaw out but the process begins at the surface and continues so long as the temperature permits. One may suspect that such continued freezing and thawing would result in wholesale displacements of stone and bone objects and the speedy disintegration of all perishable objects. Thus, when we read in Stefánsson's diary that "most of the finds (Cape Smythe) are from talus but some are from the cutbank which in places shows five foot depth of specimen-bearing earth," we need not attach great importance to the objects from these lower levels.

The destructive effect of thawing and freezing is best stated in the explorer's own words:—

It is one of the elements of uncertainty one has to face here that the degree of decay of a wooden, bone, or ivory object gives no idea of its age except one take careful account of many circumstances, only one of which is how deep down in the earth it was buried. I remember especially the finding of a spear shaft which was imbedded in the earth at an angle of about 45°. I must have dug away some of the end of it without noticing anything at all, and lower down I found what resembled a bundle of wet brown paper that could by no means be made to hang together. Farther down still the shaft was like a partly decayed stick of wood, and below that it was but slightly decayed, while the lower end of it was so well preserved in the perpetual frost that it looked as if it might have been made a year or two ago. This shaft had been buried by the caving in of a house, evidently. Had I taken samples of the upper and the lower end of this shaft and exhibited them together, without comment, any one would have thought that there might have been a difference of from one to several centuries in time between the two pieces.¹

While such conditions are perhaps far from insurmountable, they cannot be met until more exhaustive work is undertaken than is possible on ordinary exploring expeditions. Hence, we must content ourselves with an objective study of the collections according to the localities from which they come.

¹ *My Life with the Eskimo*, pp. 330-331.

HARPOON HEADS.

POINT BARROW DISTRICT.

Birnirk. The prevailing form of harpoon head used at Point Barrow, as fully described by Murdoch, occurs but rarely in our collection.¹ The two complete specimens we have bear iron points and were found near the surface; hence, they may be recent. Yet, there are a few fragments and some interesting unfinished heads, clearly of this type. Fig. 1 may be taken as an example.

The series in Fig. 2, together with similar specimens in the collection, shows in an interesting way the various steps in making a harpoon head. It is of particular interest to note that the slot for the blade is mortised through the point some distance from the end and finally cut open. The reason for this seems to be not only to secure a close fit at the end but to use the principle of a spring. To insert the blade one must force the points apart and when released they will bind upon the blade. Of course, this may not have been the motive in the Eskimo's mind; we can do no more than interpret the specimens as found. While the figured pieces are small, there is one in the collection 23 cm. long.

The most of the heads in the collection are of another type represented by Fig. 3. All have an open or grooved socket for the shaft, with grooves and holes for binding, probably sinew, since in one of the newer looking pieces, there are still some shreds of sinew binding (Fig. 4*a, b*). The end barbs are two and three-pointed. There are twenty-four examples of *a*, more or less broken, and of these two have four prongs, seven have three, and ten, eleven. The others are broken. Of the five heads like *b* and *c*, but two are complete and they have double-pointed barbs. There are nineteen similar to *d*, but only six have their barbs intact, of which four are three-pointed and two double. In these respects it appears that these harpoon

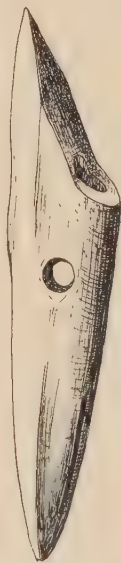


Fig. 1 (60-9277). Harpoon head from Birnirk. Length, 9.7 cm.

¹ Murdoch John. "Ethnological Results of the Point Barrow Expedition" (*Ninth Annual Report, Bureau of American Ethnology*, Washington, 1892), 221.

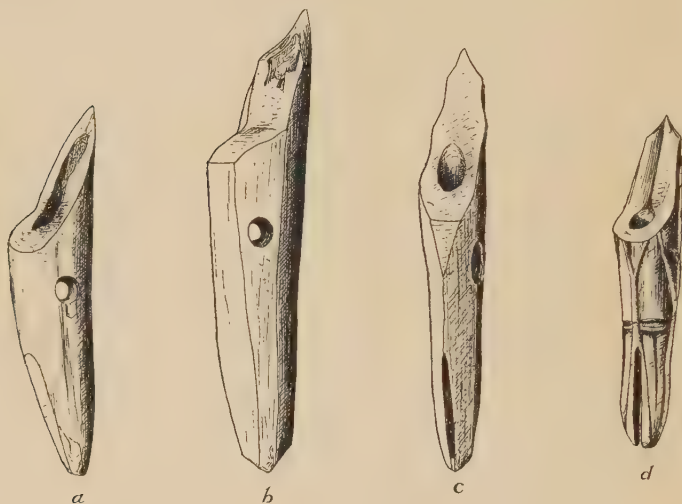


Fig. 2 (60-9414, 60.1-1089a, 60.1-1089b, 60-9420). Harpoon heads in various stages of manufacture, Birnirk. Length of a, 8.5 cm.



Fig. 3 (60-9413a, 60.1-1084, 60.1-1187, 60.1-1086, 60.1-1646). The prevailing type of harpoon head at Birnirk. Length of a, 9.3 cm.



Fig. 4 (60-9415, 60-9421). Two harpoon heads with special features, Birnirk. Length of *a*, 10 cm. *ab*, Some of the sinew lashing is still in place, showing the method of hafting. *cd*, The edge of this head is notched but does not bear the usual stone blades.

heads are all of one type, but there are other important features that subdivide them: thus, *c* and *d* have penetrating points made by shaping the shaft while *a* and *b* are cut for inserting stone points. Only one specimen has a stone point in place as shown in Fig. 3*e*. The point is chipped. Loose points of this kind occur in the collection.

A number of slate points were collected some of which fit into these harpoons. Since Murdoch reports that the modern slate points were neither riveted nor bound, it is fair to assume that the points found in our collection were used in these heads. It also appears that when a stone point is used, it is set in the plane of the line perforation, while the natural point is at right angles.

We come now to the most unusual feature of these heads. Fig. 3*b* and originally *c*, have on each side of the shaft a tiny stone blade while in *d* we have but one blade. These blades are chipped to a fine cutting edge. Their purpose is not clear since they cannot serve as barbs, but they may tend to enlarge the hole and so facilitate penetration. Murdoch figures a specimen like *c* (Fig. 210, p. 220) except that it has three-pointed end barbs. He states:—

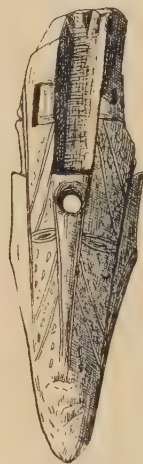
This is a peculiar form, which was perhaps not general, as it has left no descendants among the modern harpoon. Instead of the bilateral blade barbs it has an



Fig. 5.



a



b

Fig. 6.

Fig. 5 (60.1-1394). An exceptional type of harpoon head, Birnirk. Length, 10.7 cm.
 Fig. 6 (60-9413). Fragment of a decorated harpoon head, Birnirk. Length, 8 cm.

irregular slot on each side, which evidently served to hold a blade of stone, and the single barb of the body is replaced by a cluster of four, which are neither in the plane of the blade nor at right angles to it, but between the two. No modern harpoon heads from Point Barrow have more than two barbs on the body.¹

It may be noted that all of the specimens like Fig. 3a-e have their end barbs out of either the horizontal or vertical plane.

Two small heads rather new in appearance are like Fig. 4c, d.

A single broken head is shown in Fig. 5. A fragment of what must have been a highly decorated head is shown in Fig. 6.

¹ Murdoch, *ibid.*, 220.

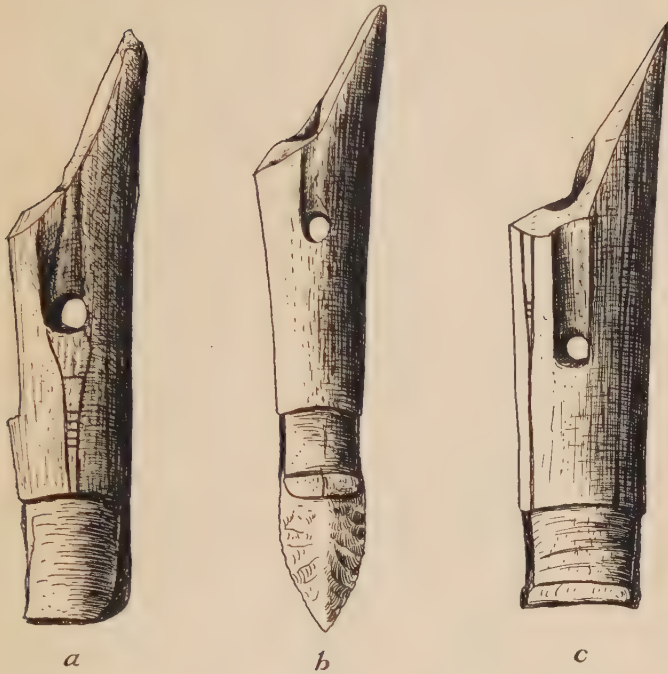


Fig. 7 (60.1-1961, 60-8161, 60-9696). Harpoon heads from Cape Smythe. Length of *a*, 10 cm.

Cape Smythe. Among the Cape Smythe material is just one large head like Figs. 212, 234, 235 (pp. 221, 238) in Murdoch, but without a head and apparently cut for a slate or metal point. It is here described as a whale harpoon. The barbed end has been broken so that its exact character cannot be determined.

Similar to Murdoch's Fig. 213 there are two well-preserved heads with copper blades and fragments of two others.

A type of head not noted by Murdoch is shown in Fig. 7. Nine of these were collected. They differ from the preceding only in that they are mortised for a heavy chipped blade, secured by sinew wrapping. The blade is set at right angles to the line hole, in contrast to the preceding.

Fig. 8*a* and *b* shows heads of this type. Fig. 8*f* is the only one without an attached blade, the point being of the original material. It may be noted that when the blade is continuous with the shaft, it is set in the plane of the line hole.

There are twelve small heads of this general single-barbed type and one with a double barb (Murdoch, Fig. 223). Four have iron blades, much

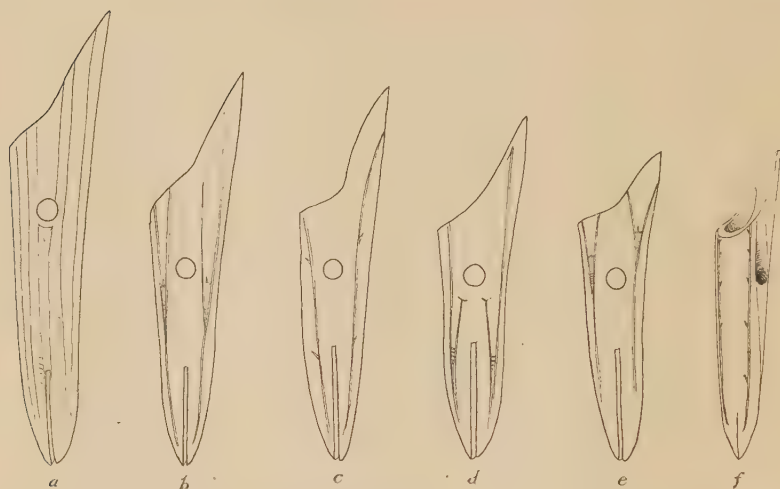


Fig. 8 (60.1-928, 60.1-204, 60-9699a, 60-9699b, 60.1-929, 60.1-211). Types of harpoon heads from Cape Smythe. Length of *a*, 14 cm.

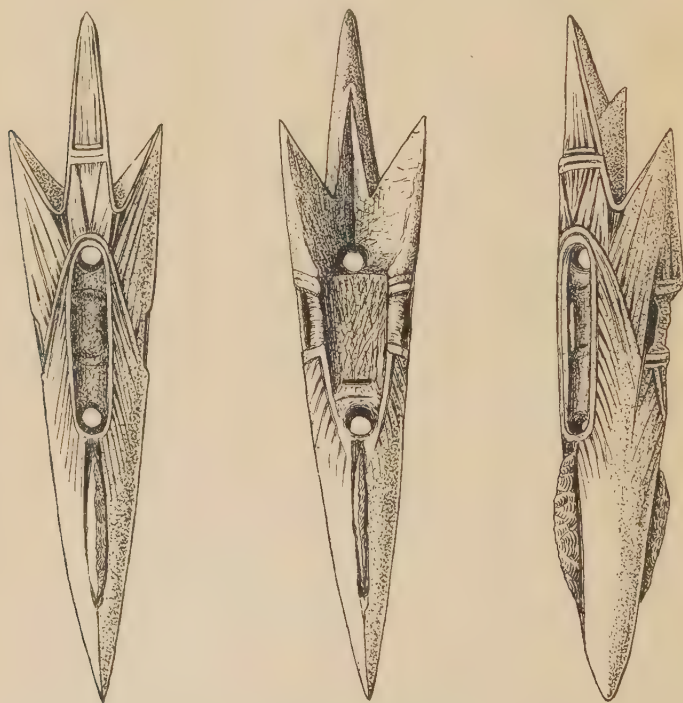


Fig. 9 (60.1-3571). Three views of an exceptional harpoon head, Cape Smythe. Length, 10.3 cm.

corroded. Two heads have flattened surfaces (Murdoch, Fig. 207). All are cut for a blade in the plane of the line hole. There are two containing parts of jadeite blades, held by bone or wooden rivets too much decayed for identification. A single head has a long slate blade and a three-pointed end barb.

One fine specimen deserves mention, Fig. 9. It has two large lateral stone blades, an open socket, and two line holes, though the relations of the latter are not clear.

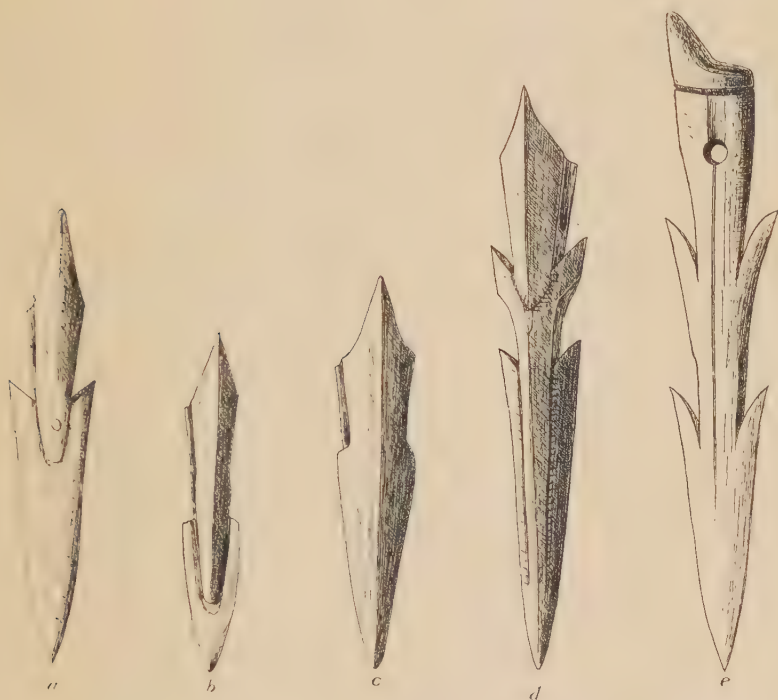


Fig. 10 (60.1-2129a, 60.1-2129b, 60.1-212, 60.1-948, 60-19a). Harpoon heads with bone blades and other new features, Cape Smythe. Length of *a*, 10.5 cm.

Fig. 10*a, b, c* presents some new features in the inserted bone blades with counter-sunk shaft ends. Fig. 10*c* is triangular in cross-section without blade.

There are five heads like Fig. 209*a*, in Murdoch, but one has a closed socket. There are also two heads similar to Fig. 1 that have open sockets and one head of the same kind without separate blade.

Similar to our Fig. 5 are two heads with slate points.

Finally, we find two heads with the peculiar side blades of stone (Fig. 3). These are precisely like Fig. 3c except that they are larger and bear a three-pointed end barb.

There remains a type of head not previously encountered, but suggesting Fig. 10c. Of these Fig. 10d may serve as the type, though some have but a

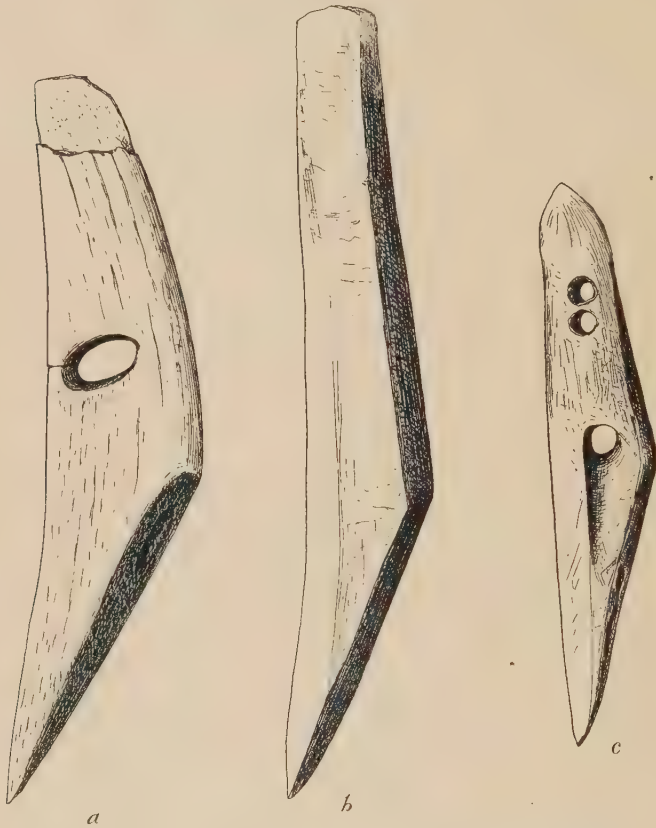


Fig. 11 (60.1-2336, 60-7358, 60-7653). Whale harpoon heads, Point Barrow. Length of *a*, 20 cm.

single pair of lateral barbs. All are without separate blades and vary in length from 9 to 17 cm. A variant of this type is shown in Fig. 10e.

Point Barrow. We come now to the immediate vicinity of Point Barrow. Of whale harpoons (Murdoch, Fig. 234) we have twelve good examples. All may be said to be of one pattern except Fig. 11a of which there is but one example. One interesting blank, or unfinished head, is shown in Fig.

11*b* and a curious form in Fig. 11*c*. In this case the point is formed from the original material. In addition to these there are three heads of the pattern above (Murdoch, Fig. 234) but about half the size. Six specimens are sufficiently well preserved to show what Boas calls ownership marks (Fig. 12).

Of walrus harpoon heads we have four well-preserved examples, evidently not old. They agree exactly with Murdoch's Figs. 215 and 217. One of our specimens is double-barbed also. The blades are of iron, brass, and copper.

Then we have some eight smaller heads (Murdoch, Fig. 223), ranging in length from 6 to 10 cm. These are most likely seal harpoons. Three of them have double-pointed end barbs and one has three. One has a blade of bone, another of copper, and the rest of iron. All are set in the plane of the line hole.

There are a few heads made of antler and similar in lines and decoration to Fig. 8*d* from Cape Smythe.

There is a small lot of specimens noted as random finds between Point Barrow and Cape Smythe. It contains nothing new in harpoons, but we find one of the walrus type with a long slate blade and a toy whale head bearing an ornate blade of the same material.

A number of heads are of the type shown in Fig. 7*c*, some of antler, and some of ivory. They are of two sizes corresponding to the walrus and seal heads, respectively. All have single end barbs and their blades at right angles to the line hole. Also, there are two with a pair of additional side barbs of the original material, but cut for the chipped point as above.

There are ten heads like Fig. 10*c* from Cape Smythe ranging in length from 7 to 14 cm. Also we find a very few very like Murdoch's Fig. 211. Of the type of Murdoch's Fig. 209*a*, there is just one example, apparently of recent make.

Two additional heads have the open socket of Fig. 3*d* of which one is like Fig. 3*e* except that the end barb is single. The other is incomplete, Fig. 13.

The type of Fig. 10*d* is represented by eleven cases of which four have one pair of side barbs and seven, two. Of Fig. 10*e* there are a few examples.

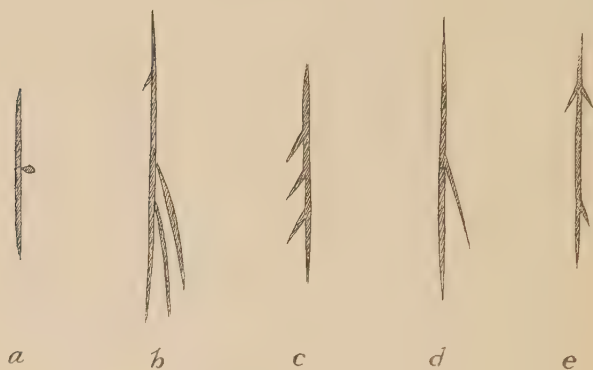


Fig. 12 (60-7552, 60.1-2335, 60-7551, 60-7356, 60-7555). Ownership marks from whale harpoons, Point Barrow.

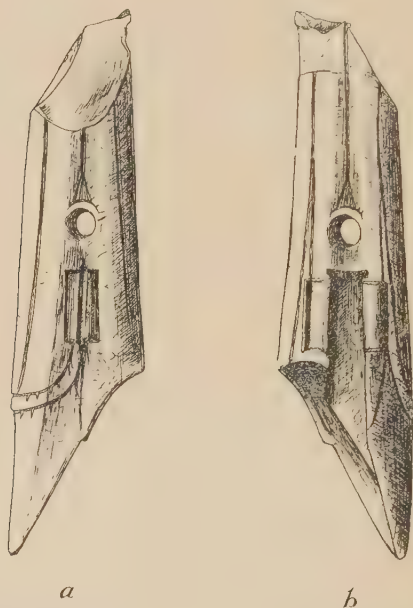


Fig. 13 (60-7599a). Fragment of a harpoon head with open socket and perforations for hafting, Point Barrow. Length, 9.5 cm.

POINT HOPE.

There are three whale harpoon heads all of which have a single point for the end barb which places them with our Point Barrow type. One specimen is much weathered and the end finished to take a chipped blade (Fig. 14).

There is one incomplete example of the Point Barrow walrus head and a number of the smaller seal heads. Of the latter three have a tri-part end barb, four are bi-pointed, and three have a single point. One has an iron blade and all are cut for blades of similar thickness. Then we find three heads of antler like Fig. 8*d*, one of which is similarly decorated, also two like Murdoch's Fig. 211.

Six heads belong to the type of Fig. 10*d* and with one exception are four-barbed on the sides. Two additional examples present peculiarities

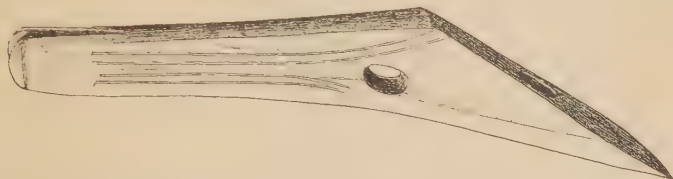


Fig. 14 (60-7145). A whale harpoon, Point Hope. Length, 22 cm.

not so far encountered (Fig. 16). Also, we find four heads similar to the first six, but having the line hole at right angles to the lateral barbs which then puts the end barb in the same relation. Then one head is cut for a blade as in Fig. 15*b*.

Fig. 17 is of unusual interest. It is clearly related to the type of Fig. 3, and though it bears no lateral stone blades it has in their place unmistakable grooves so finished as to leave no doubt as to their conventional character. In some of the Birnirk specimens we noted slight curved hollows at these points suggesting the blade sockets, but it is only in this case that the relation is clear. The significance of this is that it is a fine example of the survival of a useful character as a decorative motive. Also it raises the question of chronology and suggests the use of the lateral blades in former times.



Fig. 15 (60-7185b, 60-7192c, 60-7185c). New types from Point Hope. Length of *a*, 12.6 cm.

FRANKLIN BAY DISTRICT.

The second part of the collection is from the coast between Cape Bathurst and Cape Parry. Owing to difficulties of transportation the bulk of material is far less than that at Point Barrow and hence presents a less satisfactory series. We shall take up the harpoon heads by localities.

Cape Bathurst. From an old grave near Cape Bathurst were taken three harpoon heads. Fig. 18b is a whale head having a triangular cross-section and the line hole very near the top. An unfinished piece of the same shape (Fig. 18b) accompanied it and the tool marks suggest steel cutting edges. A small head with a separate bone blade (Fig. 19) completed the set. At another site not far away, a similar head was found. It is unfinished and of bone like the preceding.

Baillie Island. From this site we have a single seal head (Fig. 20). The material is bone and slightly decorated, with sharp ridges on the sides.

Horton River. We have two seal heads, one complete, shorter but otherwise identical with the above (Fig. 19); the other slightly larger, but broken. The former has a single bone rivet to hold the blade.

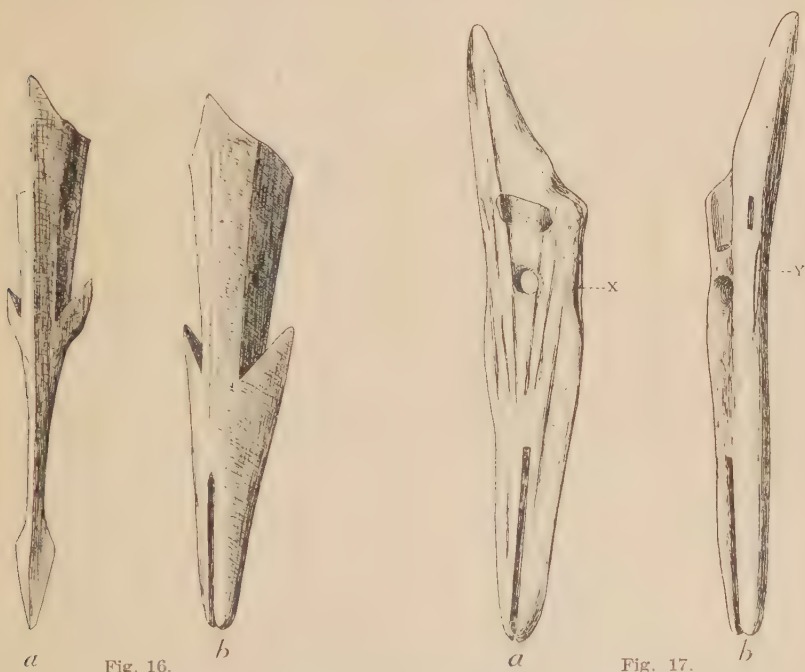


Fig. 16.

Fig. 17.

Fig. 16 (60-7185a, 60-7192b). Unusual forms from Point Hope. Length of a, 9.7 cm.

Fig. 17 (60-7192a). Head bearing conventional grooves for blades, Point Hope. Length,

11 cm.

Langton Bay. From the shores of Langton Bay we have two small heads with separate blades, one of ivory, and the other of bone. Of the same general type are twelve heads without blades ranging in length from 6 to 9 cm. They agree very well with Fig. 19. In most cases the socket for the blade has been cut by successive drilling and the blade inserted without smoothing down the inner surfaces. Nearly all are drilled for a single rivet. The shaft socket has been strengthened in two cases by drilling and counter-sinking as in Fig. 17 and in another case by a counter-sunk wrapping on the outside. A decorated specimen of the above type is shown in Fig. 21.

Fig. 22 was found on the surface and is slightly weathered. It reminds one of Fig. 17 but has two parallel counter-sunk grooves for the wrapping of the open socket. Figs. 23*a, b, c* all present interesting forms.

From a place called Okat, on the Bay, comes a very fine whale head (60.1-3092) like Fig. 18*b*. On the flat under surface are two deep longitudinal grooves. In addition, there are two seal heads like those just described.

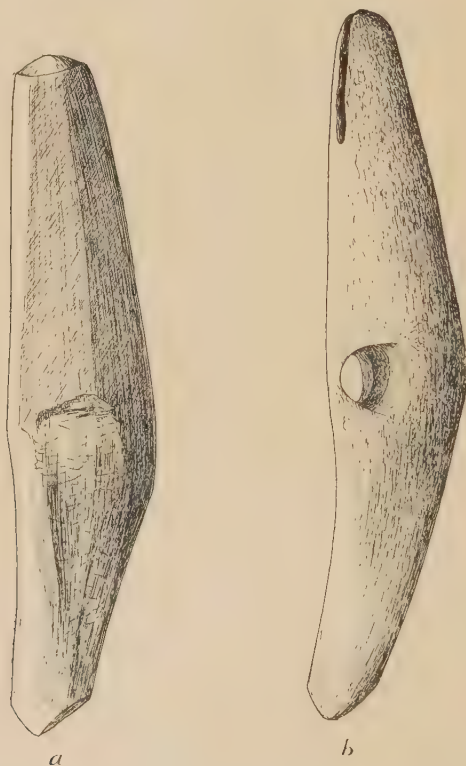


Fig. 18 (60.1-3075, 60.1-3074). Harpoon heads from Cape Bathurst. Length of *a*, 18.1 cm.



Fig. 19.

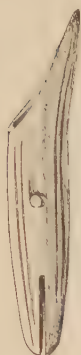


Fig. 20.



Fig. 21.

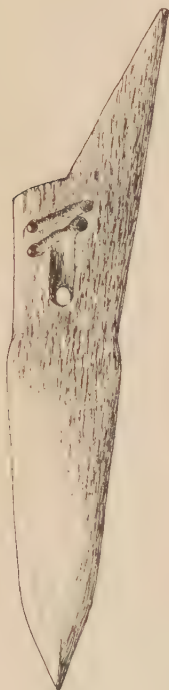


Fig. 22.



a



b



c

Fig. 23

Fig. 19 (60.1-3080). A small harpoon head with bone blade, Cape Bathurst. Length, 9.8 cm.

Fig. 20 (60.1-3240). A harpoon head from Baillie Island. Length, 9 cm.

Fig. 21 (60.1-3333). A decorated harpoon head from Langton Bay. Length, 7.7 cm.

Fig. 22 (60.1-3065). Weathered harpoon head from Langton Bay. Length, 11.8 cm.

Fig. 23 (60.1-3315a, 60.1-3215b, 60.1-3337). Harpoon heads from Langton Bay. Length of a, 11 cm.

DARTS.

Under harpoons we have considered all penetrating heads engaging the end of the shaft in a socket. There is another class of heads distinguished by being set into a socket in the end of the shaft. These may be intended to retrieve the game or they may not: in any case, they depend upon side barbs to hold their victim and not upon a toggle action as with the harpoon. Since we are studying archaeological specimens we must classify according to form, though where identity is found with types described by Murdoch and Nelson it is fair to assume that the functions were the same.

POINT BARROW DISTRICT.

Birnirk. The well-known bone arrow point of the north (Fig. 24*c*) is represented by but two specimens. It will be noted that the distinguishing feature of this type is the pointed tang with shoulder. Yet, we find a number of similar two-barbed darts considerably larger and with an enlargement instead of an incised shoulder to the tang. Fig. 24*a* is one of five somewhat fragmentary specimens, which have a knobbed tang and evidently bore stone points. Such darts are noted by neither Nelson nor Murdoch.

Fig. 24*d* is represented by two specimens, though there are two others of the same form except that the barbs are upon one side only. There are fragments of several large darts like Fig. 24*b* which seem to have been used without retrieving lines. Three somewhat unusual forms represented by one specimen each are shown in Figs. 24*f*, *h* and *i*. Fig. 24*j* is peculiar in its tang and this is not an accident for there are other examples. However, it and Fig. 24*e* may have been parts of a bird or fish spear as most certainly was Fig. 25. In a general way, it may be said that these darts do not show very close parallels to the figured specimens in Nelson and Murdoch.

Fig. 24*g* shows what is without doubt a retrieving dart, probably for fish.

Cape Smythe. In contrast to the Birnirk collection we find here a large number of darts. First we have fourteen of the precise pattern of Fig. 24*c*, but ranging in length from 6.5 to 8 cm. The tangs of these darts have a pair of small barbs evidently designed to prevent pulling out of the shaft socket. There are five additional darts differing only in that they have two unilateral barbs. There is also a single small dart with fine barbs. Finally, there are two without barbs of any kind.

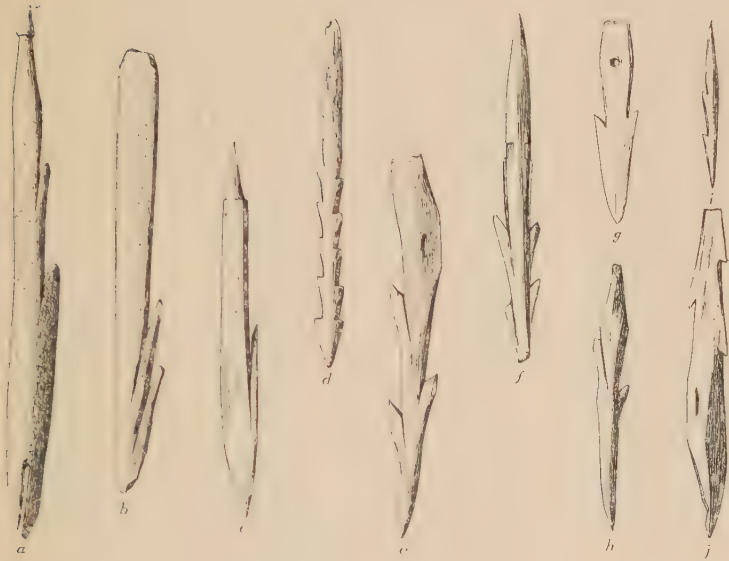


Fig. 24 (60-9427, 60.1-1095, 60.1-1731, 60.1-2517b, 60-9291, 60.1-2517a, 60.1-1098, 60-9433, 60-9442, 60-9439). Types of darts from Birnirk. Length of *a*, 16 cm.



Fig. 25 (60-9399). Dart for a spear, Birnirk. Length, 28.4 cm.

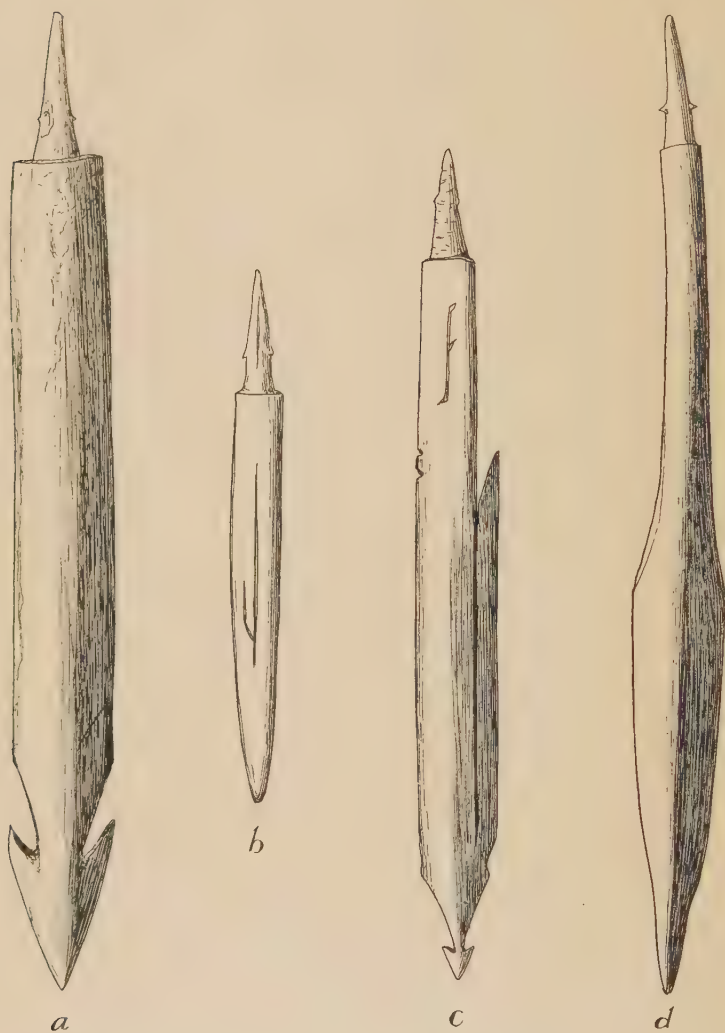


Fig. 26 (60.1-895, 60-8475, 60.1-47, 60.1-491). Darts from Cape Smythe. Length of *a*, 17 cm.

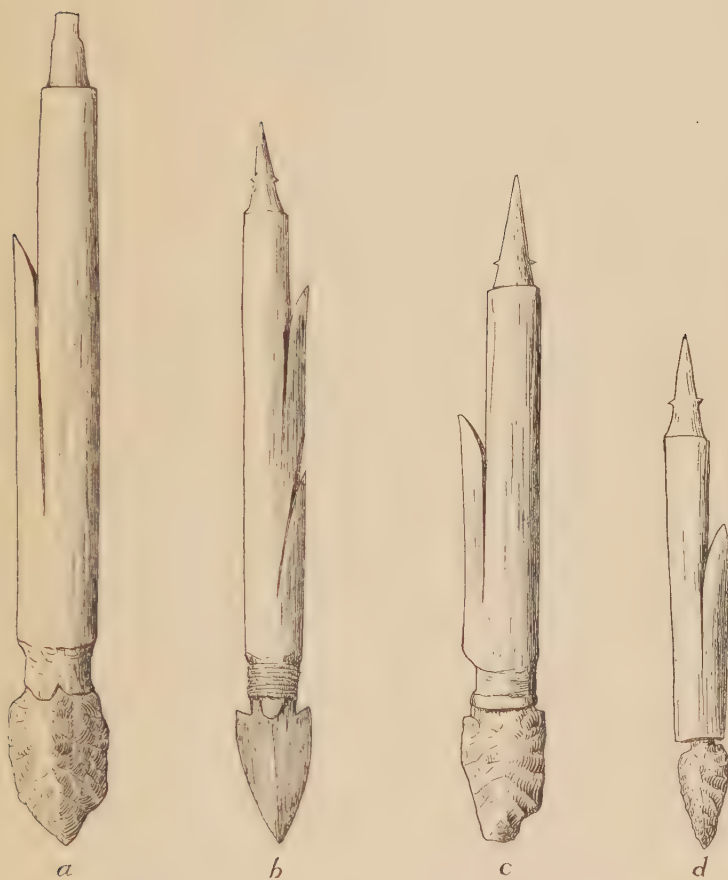


Fig. 27 (60.1-1852, 60-9078, 60-9033, 60-8873). Stone pointed darts, Cape Smythe.
Length of *a*, 14.9 cm.

Fig. 26*c* is one of three bearing a barbed point. Of other types we find Figs. 26*a* and *d*. The object in Fig. 26*b* differs from those mentioned above in being circular in cross-section. Of these, there are six, but some may be the butts of toy lances. The one figured has a property mark.

Of this type (Fig. 27) are eleven darts with detached blades. Four were found with stone blades in place, three chipped, and the other of slate, Figs. 27*a-d*. Another, Fig. 28*e*, is cut for a blade to be tied upon one side

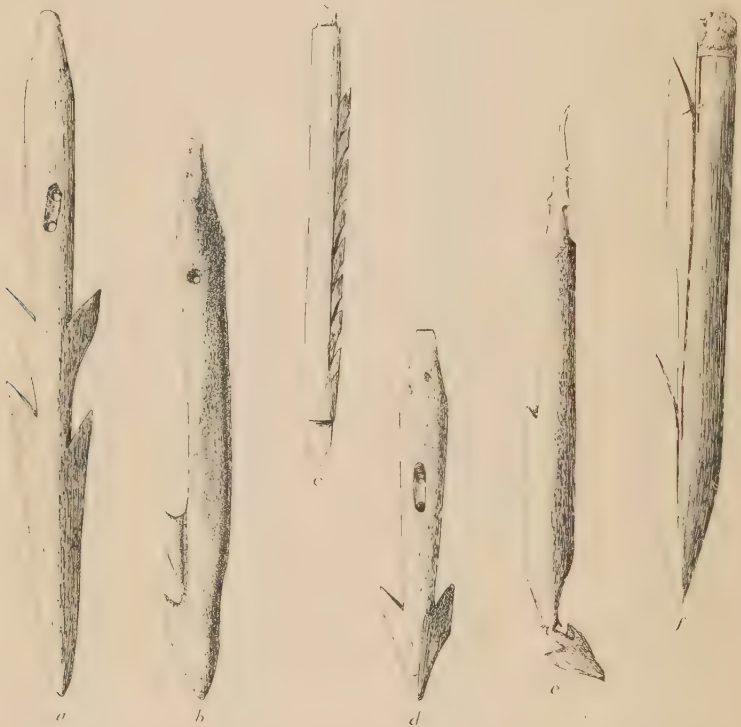


Fig. 28 (60.1-224, 60.1-489, 60.1 509, 60-9708, 60.1-1952, 60.1-28). Large darts from Cape Smythe. Length of *a*, 31.8 cm.

and bears a number of unilateral barbs. Unfortunately, Fig. 28*f* is incomplete. Figs. 28*a* and *d* have their parallels in Nelson.

A number of unusual forms are shown in Fig. 29*a, c, e, f, h*. Of darts provided with lines for retrieving we find small ones as in Fig. 29*b, d, g*. The latter still has the hole filled by the remains of a line and so cannot be very old.

There are a large number of what we take to be fish darts all precisely

similar to Fig. 24*g* from Birnirk. In addition we find a few variants as in Fig. 30.

Of barbs from bird spears there are several examples, some like Fig. 25 from Birnirk and some quite small as if from fish spears.

Finally, we may note a series of detached bone blades (Fig. 31).

While it is clear that we have here a much larger run of specimens than at Birnirk the fundamental forms are much the same. The Birnirk arrow



Fig. 29 (60.1-894, 60-9793, 60.1-385, 60.1-1529, 60.1-1530, 60-8805a, 60.1-521, 60-9809). Exceptional forms of darts from Cape Smythe. Length of *a*, 13.1 cm.

darts, Fig. 24*c*, seem to lack the little spurs on their tangs and we find nothing at Cape Smythe like Fig. 24*a*. The latter may, however, be the form of Fig. 27*b* but all the Birnirk pieces have their blades in the other plane. Cape Smythe also offers nothing like Fig. 24*e*.

We have previously noted property marks on harpoon heads and find those of Fig. 32 on darts. These are but a small portion of the darts in the Cape Smythe collection, the others being unmarked.

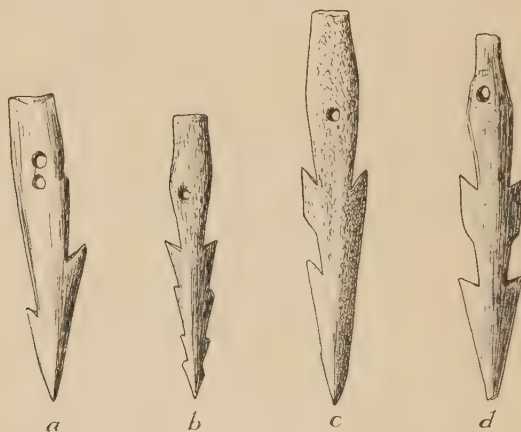


Fig. 30 (60-8801, 60-8813, 60-8799, 60.1-927). Special forms of fish dart, Cape Smythe. Length of *a*, 5.4 cm.

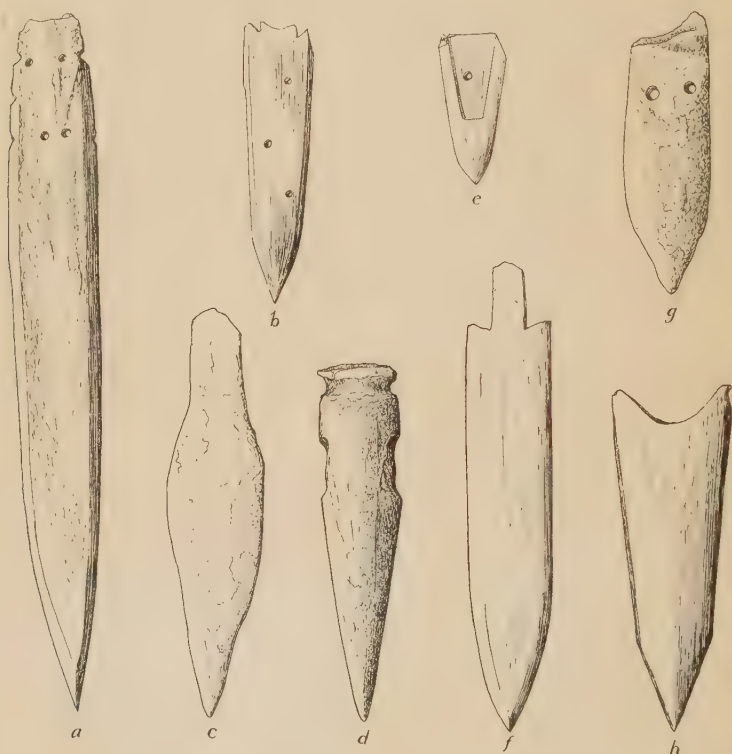


Fig. 31 (60-9673, 60.1-209, 60-8160, 60-8474, 60.1-1526, 60.1-208, 60.1-6, 60-9966). Bone blades and points from Cape Smythe. Length of *a*, 18 cm.

Point Barrow. From the Point Barrow site we have a still larger number of darts. Of the type in Fig. 24c there are thirty-eight examples showing great range of length and size, 5.5 to 21 cm. Some of them have the spurs upon their tangs, but some have the knobbed end as in Fig. 24a, and still others have a circular ridge at the middle. The prevailing material is antler, but some are of bone and some of ivory. There are sixteen other darts differing only in that some have two and some three lateral barbs.

Some eighteen darts are of more or less fantastic form after the pattern in Figs. 26c and 28e. There is considerable variety in these but their illustration seems unnecessary.

Of darts for stone blades like Fig. 27a from Cape Smythe, there are fourteen examples. One of these has six side barbs and the others vary from one to three each. One specimen has a fine slate blade and came from one foot below the surface. Also, there are a number of forms comparable to, but not duplicates of Fig. 29a-h from Cape Smythe.

Fig. 26b is here represented by eighteen specimens showing some variation in length and in one case cut for the insertion of a stone or metal point.

In general, it may be said that the identity of these darts with those of Cape Smythe is established.

Fig. 33 shows the blunt head of a bird arrow. These are frequent in the Point Barrow collection but rare in the other sites.



Fig. 33 (60-7883).
Head of a bird arrow,
Point Barrow. Length,
5.2 cm.



Fig. 34 (60-7449). A large dart head intended for use with a stone blade, Point Barrow. Length, 31.4 cm.

As to retrieving darts we find a much smaller number of the type shown in Fig. 30a than at Cape Smythe. Yet no essential differences appear either in their sizes or forms, except in one instance. This is a well-preserved dart of ivory, 11 cm. long.

Fig. 34 is one of several very large darts, cut for stone blades. Their lengths vary from 25.5 to 31 cm. Also, we find a few like Figs. 28a and d.

This brings us to barbs from bird and fish spears. Similar to the shaft barbs of Figs. 195 and 199 in Murdoch we find a few well-preserved examples, evidently of recent make. Of the paired end barbs there are both new and

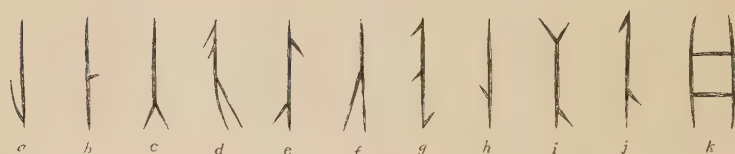


Fig. 32. Ownership marks on Cape Smythe darts.

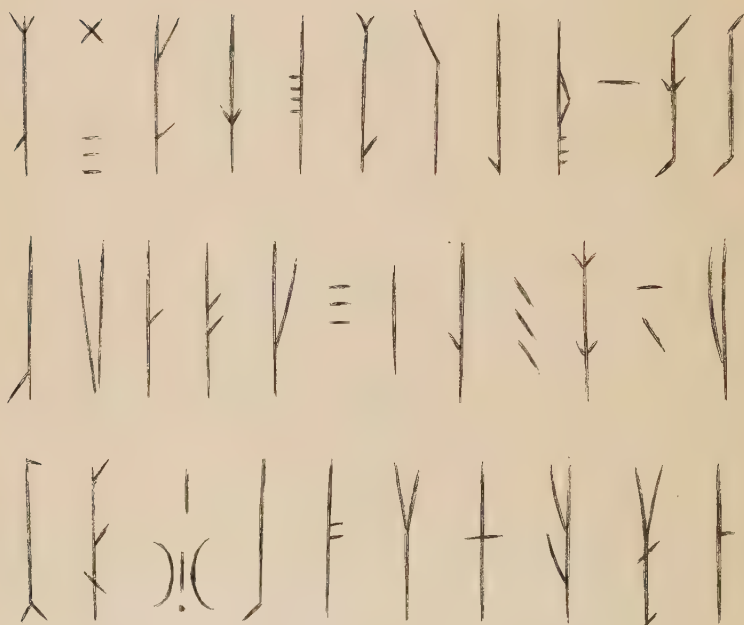


Fig. 35. Ownership marks on darts from Point Barrow.

old examples. We note also some newly made specimens similar to Fig. 24*c* at Birnirk, a form not found at Cape Smythe.

Of the channeled dart described by Murdoch (Fig. 188) we find a few cases here and also at Cape Smythe, but some are cut in a way to suggest their use on bird spears. Since this channeling appears on a few darts of the type in Fig. 24*c* it may be entirely due to the natural form of the material and so not intentional.

In the collection from Cape Smythe we found a number of bone blades, Fig. 31. Such are conspicuously rare in the Point Barrow series. Property marks are again numerous, as may be seen in Fig. 35.

Isatkoak. In this small lot of specimens we find ten of the type shown in Fig. 24*e*. Two of these have two barbs. The tangs vary somewhat and on the whole seem more rudely finished. Some have the small spurs previously mentioned, while others have the knobbed end. One broken piece is cut as if for a stone blade. Like Fig. 29*c* from Cape Smythe we find two examples. Of the form in Fig. 24*e* from Birnirk, there are two examples.

Two small harpoon heads are like Fig. 209*a* in Murdoch except that they have only one barb.

Wallikpa. The small lot of finds from this site, as stated by Stefánsson, contains a few harpoons of the Birnirk type, Fig. 3. There is one long dart like Fig. 24*a* but without the mortise for a separate blade. Another dart is like Fig. 26*b* from Cape Smythe, but the tang is broken off so that its precise form cannot be determined.

POINT HOPE.

In the Point Hope collection we find a small number of darts. There are twelve of the precise type in Fig. 24*c*. Two of these have two barbs, the others one each. There is one specimen which is circular in cross-section and without barbs. Of retrieving darts there are several examples as in Fig. 15. Finally, we have two small ones like Fig. 29*d* from Cape Smythe.

There are a few property marks on these arrow darts.

FRANKLIN BAY DISTRICT.

Darts are fairly well represented here. We find our typical form, Fig. 24*c*, at Langton Bay and Cape Parry, but in the minority. The prevailing form for the one-barbed dart is Fig. 36*m* except that the tangs usually have

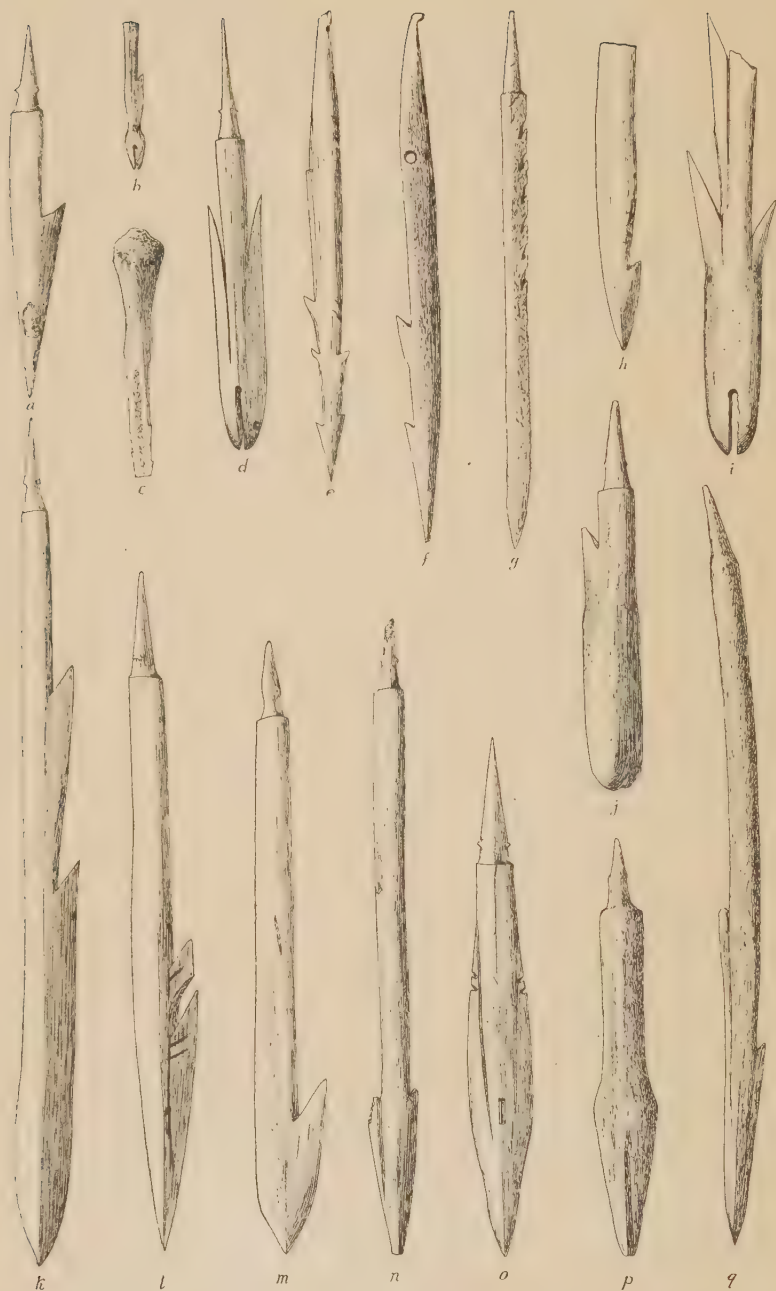


Fig. 36 (60.1-3066, 60.1-3163a, 60.1-3314, 60.1-3170, 60.1-3317, 60.1-3247, 60.1-3157, 60.1-3096, 60.1-3315a, 60.1-3315b, 60.1-3145a, 60.1-3243, 60.1-3317a, 60.1-3317b, 60.1-3241, 60.1-3425, 60.1-3245b). Darts from the Franklin Bay District: *a, c, e, i, j, m, n* from Langton Bay; *b, g*, Cape Parry; *d*, Victoria Island; *f, l, o, p, q*, Baillie Island; *h*, Okat; *k*, Horton River. Length of *a*, 9.4 cm.

spurs like those from Alaska. This type was collected at Cape Parry, Langton Bay, Horton River, and Franklin Bay. The other darts have two or more barbs on the side. From Baillie Island is a dart similar to Fig. 27*b*, but minus its blade. From Franklin Bay there is a broken one like Fig. 27*a* from Cape Smythe, while from Langton Bay we have a number of darts mortised for blades. Curiously enough, most of the latter have ends like Fig. 24*a* from Birnirk. Fig. 36*i* is not quite complete but in Fig. 36*d* we have a fine example from Point Williams, Victoria Island. Of unusual forms we may note Fig. 36*o*, *p*, *q* from Baillie Island.

Practically all of these darts have spurs on the tang, as previously noted, but are entirely free of anything precisely like property marks.

There is one large channeled dart from Baillie Island (See Murdoch, Fig. 188).



Fig. 37 (60.1-3099, 60.1-3242). Large darts: *a*, from Okat; *b* from Baillie Island. Length of *a*, 33.8 cm.

In no case were stone or bone blades found in place but there is an ivory one from Langton Bay like Fig. 31*e*, Cape Smythe.

There are several bird darts as in Fig. 36*c*, the same type occurring at Cape Parry and Langton Bay.

Of darts secured by a line there are but three certain examples. Figs. 36*f* and 37*b* are from Baillie Island. There is one very large piece (Fig. 37*a*) from Okat which notwithstanding its peculiar shape must have been used as a retrieving dart.

A few fragments from Baillie Island suggest fish or bird spears and from Cape Bathurst there is one complete specimen, but on the whole these darts are conspicuously absent from the Franklin Bay collections. From Okat there is a dart like the center prong of the fish spear shown in Fig. 27 (this volume, p. 83). From Langton Bay we have the type of Fig. 36*e*.

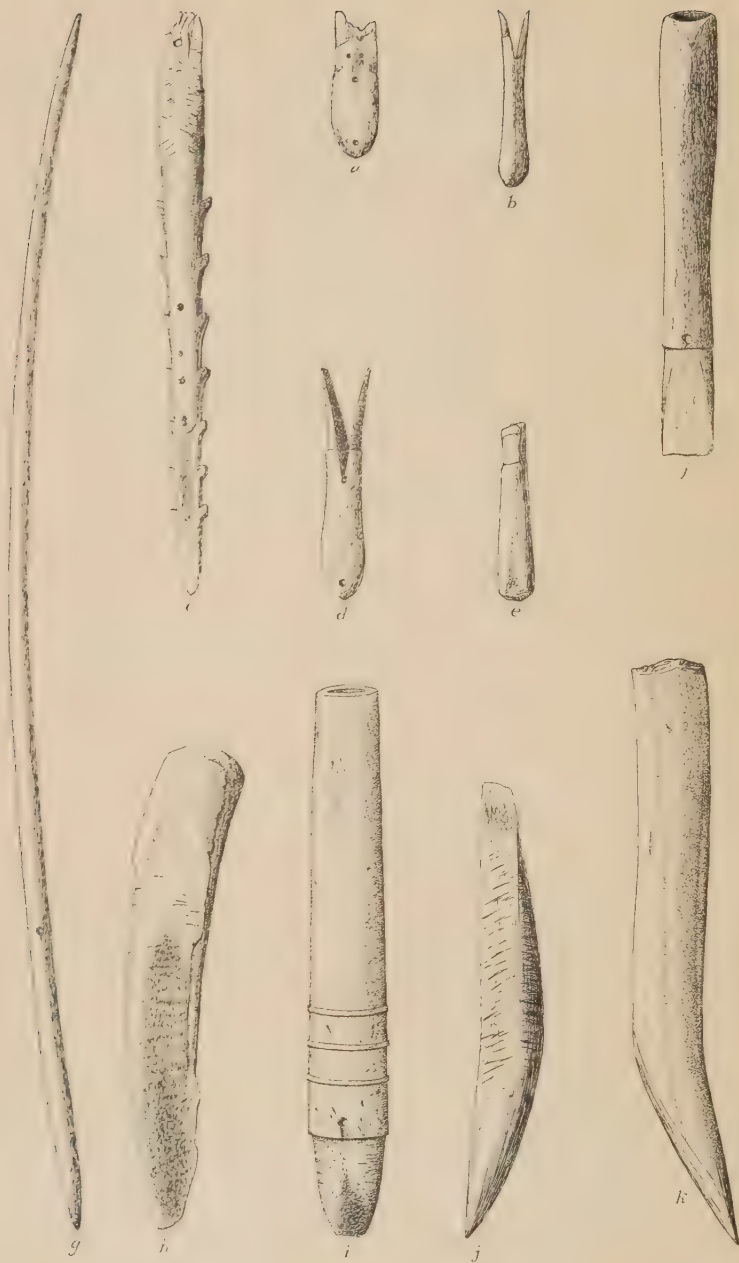


Fig. 38 (60.1-3008, 60.1-3313, 60.1-3167a, 60.1-3094, 60.1-3324, 60.1-3424, 60.1-3273, 60.1-2955, 60.1-3213, 60.1-2952a, 60.1-2949). Miscellaneous objects from the Franklin Bay District: *a, d, h, j, k*, from Okat; *b, e, i*, Langton Bay; *c*, Victoria Island; *f, g*, Baillie Island.

MISCELLANEOUS PARTS OF HUNTING APPLIANCES.

From the Franklin Bay District we have a few trimmings for harpoon shafts. From a grave on Baillie Island we have a foreshaft and socket (Fig. 38*f* and *g*). The length of the former suggests the Coronation Gulf type, Fig. 6, p. 53. A similar socket comes from Langton Bay and one from Okat. These give us a uniform type which, however, differs from those on Coronation Gulf specimens.

Two foreshafts from Langton Bay and one from Okat are but 29 to 30 cm. long, a little more than half the length of the Baillie Island specimens. They further differ in having the line hole through the ridged edge of one side. All of the above specimens are much weathered. A new socket of entirely different shape is shown in Fig. 38*i* from Langton Bay.

From the Franklin Bay sites come also a number of bone objects as in Figs. 38*h*, *j* and *k*. They seem to be ice picks some of which are adapted to attaching to the butts of harpoons and lances as in Fig. 6, p. 53. In many cases, where not too much weathered, the points show considerable



Fig. 39 (60.1-3137). Copper pointed ice pick, Coppermine River. Length, 32.6 cm.

wear. Fig. 38*h* has a deep socket in the end as if for a copper point like Fig. 39. Figs. 38*c* and *j* have been beveled to fit the shaft and roughened for a grip.

From the Coppermine River is a fine copper-bladed pick with an antler haft (Fig. 39).

From Point Williams on Victoria Island we have an unusual dart (Fig. 38*e*), a lance head. From Okat are two heads for stone or metal blades (Figs. 38*a* and *d*).

From Langton Bay are two objects which from their size seem to be the butts of lances, but may be from large arrows (Fig. 38*b*, *e*).

The ice picks referred to above are of antler and when we look at the collection from Birnirk we find a number of somewhat similar antler pieces. Particularly suggestive are their hacked ends. Two specimens, while more symmetrical than Fig. 38*h* were nevertheless attached to the shaft in the same manner. Fig. 40*a* is quite like those from Langton Bay; also from Wallikpa there is one piece like this. On the whole, it must be noted that

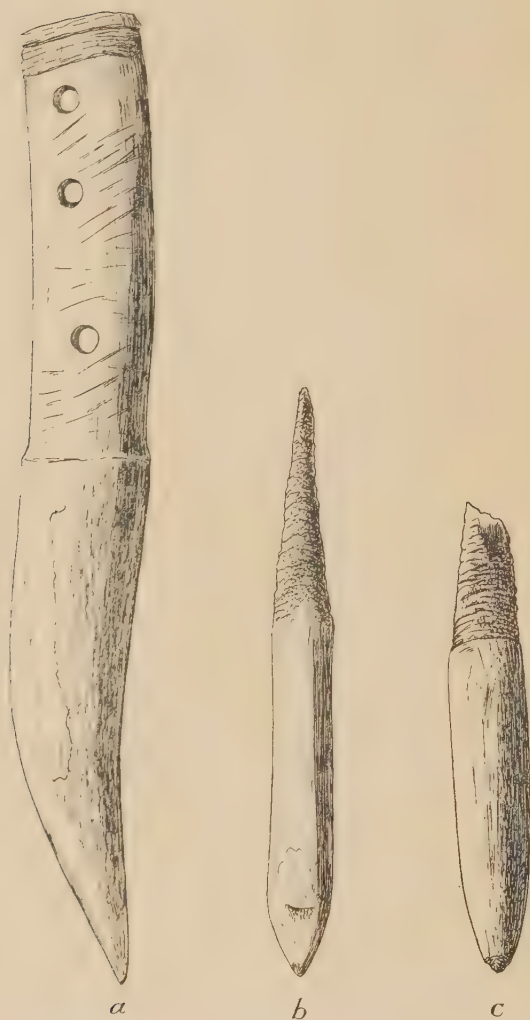


Fig. 40 (60.1-1323, 60-9460, 60.1-1122). Ice pick and shaft butts from Birnirk. Length of *a*, 25 cm.

we have here a striking similarity. There is nothing of this kind in the Cape Smythe collection and but one doubtful example from Point Barrow.

On the other hand, we find at Barrow and Smythe a large series of another kind of butt (Fig. 41), but of these the type represented in Fig. 41a does not occur at Cape Smythe.¹ Of the long sword-like butt figured by Murdoch we have but one very new example from Point Barrow.

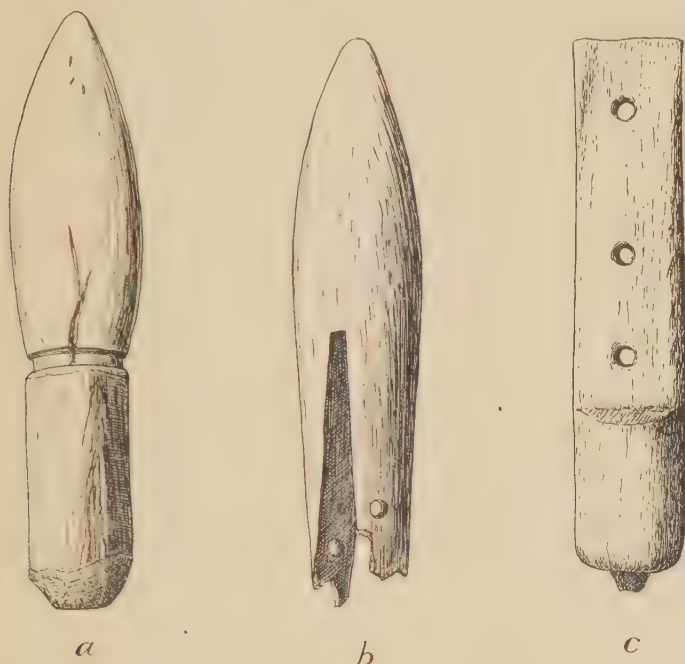


Fig. 41 (60-7578, 60-9826, 60-7927). Butts for harpoon and lance shafts: *a* and *c*, Point Barrow; *b*, Cape Smythe. Length of *a*, 9.3 cm.

As to sockets the Birnirk collections offer no examples, neither do Walikpa or Isatkoak. This is curious but may be accidental. From Cape Smythe we have a few only, but from Point Barrow there are a large number. The walrus socket (Murdoch, Fig. 222) is found at Cape Smythe but the Point Barrow sockets are somewhat different (Fig. 42). The form shown in Fig. 42d is represented by a single example at Cape Smythe.

¹ In our collections from Alaska, there is found an ice staff (Nelson, E. W. "The Eskimo about Bering Strait," *Eighteenth Annual Report, Bureau of American Ethnology*, Washington, 1901, Fig. 68) on the end of which is a butt of this type.

There are four sockets of unusual form from Point Barrow (Fig. 43). The drilling seems to have been for holding the lashing.

Foreshafts are of rare occurrence in our collections, possibly because their size prevented their being discarded. From Birnirk we have but two examples (Fig. 44*d*), from Cape Smythe there are also two (Fig. 44*e*), but

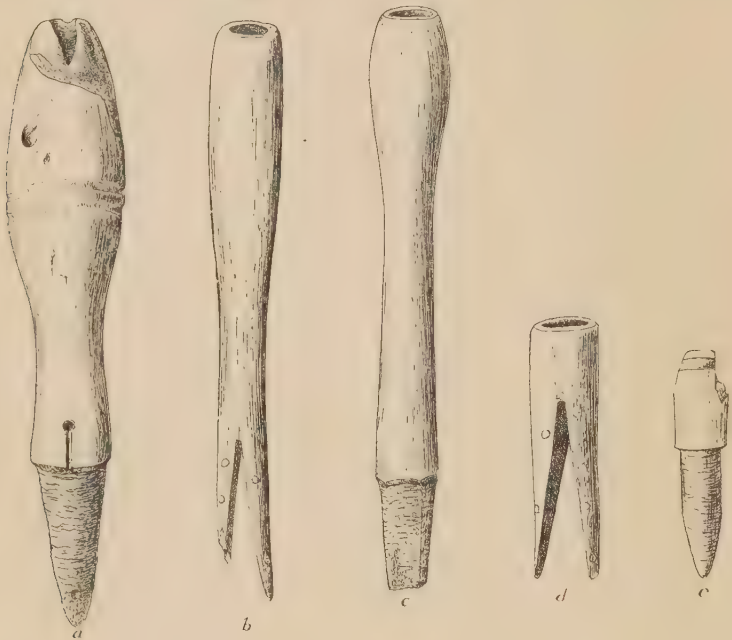


Fig. 42 (60-7565, 60-7573a, 60-8289, 60-7843, 60-7865a). Harpoon sockets from Point Barrow. Length of *a*, 24 cm.

in the Point Barrow collection there are a variety of forms (Figs. 44*a*, *b*, *e*, *f*, *g* and *h*). There is part of a very heavy one like Fig. 44*e*. At Point Hope a number of short ones like Fig. 44*h* were found, the use of which is shown in the illustrations of Murdoch. It seems that all the foreshafts of the Alaska sites tend to be short and stubby in contrast to those from the Franklin Bay District.

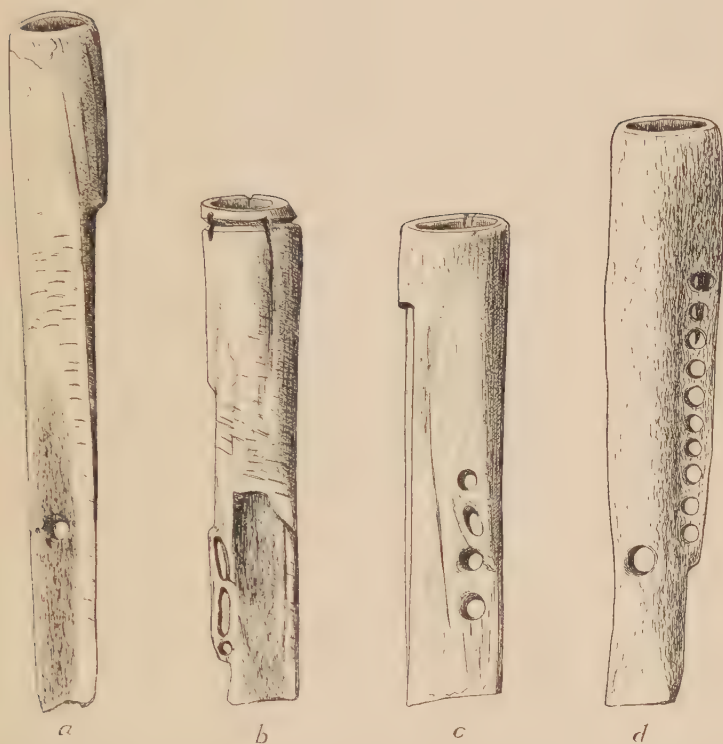


Fig. 43 (60-7573c, 60-7573b, 60-7398, 60-7635a). Unusual sockets from Point Barrow. Length of *a*, 24.7 cm.

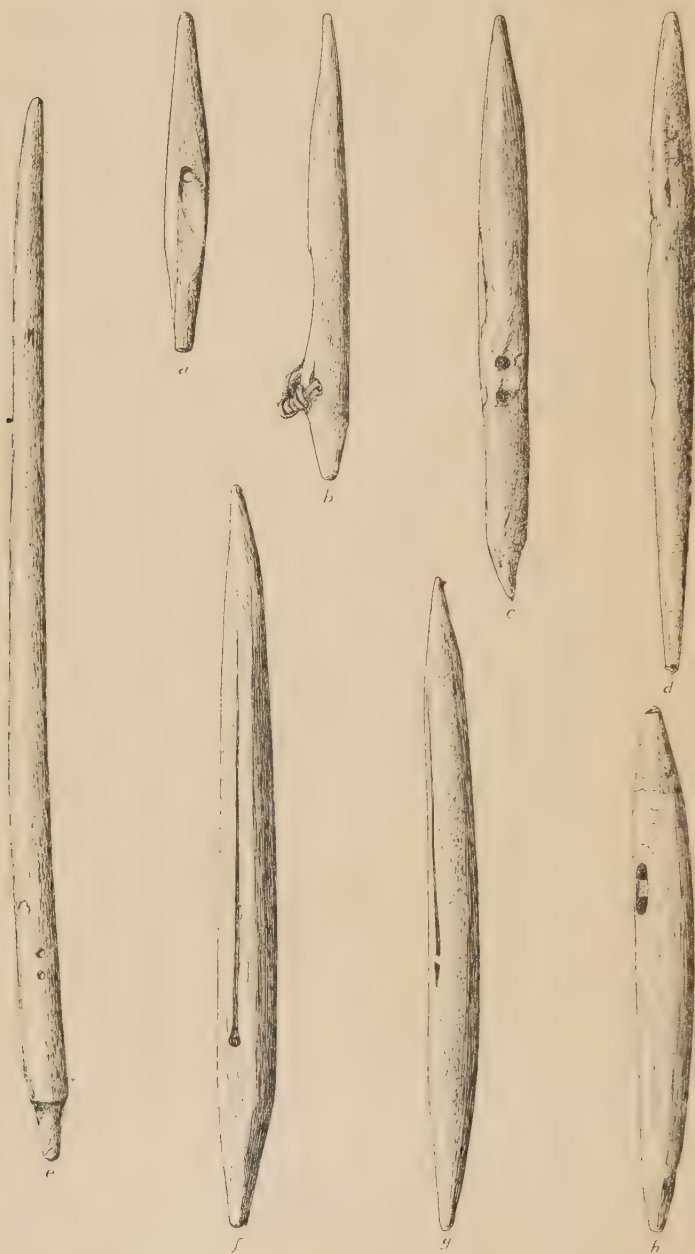


Fig. 44 (60-7458a, 60-7459, 60-9686, 60-8679, 60-7391, 60.1-2599, 60-7451, 60-7458). Foreshafts for harpoons: *a, b, e, f, g, h*, from Point Barrow; *c*, Cape Smythe. Length of *a*, 10 cm.

GENERAL DISCUSSION.

In his diary Mr. Stefánsson has given the data for assuming that Birnirk and Wallapai (Uallikpa) were the oldest sites. We have noted that a certain type of harpoon is in evidence at these sites but occurs at Cape Smythe less frequently and but rarely at Point Barrow. A variant of it was found at Point Hope. Then Bogoras¹ found on what he regards as ancient Eskimo and Chukchee village sites, eastern Siberia, similar forms. None of his examples have the stone blades set in their sides, but one has the conventional groove noted on the Point Hope specimens. There are four examples in the Miner Bruce collection, two of which are said to be from Port Clarence, for the other no locality is given. All have a single-pointed end barb and so suggest the Point Hope specimen (Fig. 17). One of the Port Clarence pieces bears also the conventional groove as if for a stone blade, but the others do not show it. On the other hand, the decorations of these Siberian heads are strikingly like those from Birnirk. The fact that these types are clearly associated with old sites in Siberia strengthens our finding and indicates an older unity of culture in eastern Siberia and western Alaska. It may be noted that Fig. 3c, Birnirk, is quite like Fig. 73 in Mason's paper on harpoons² where it is catalogued as from Point Barrow, whence it is more than likely that in reality it also was found at Birnirk.

East of Alaska we do not find this precise type of harpoon head but still there are some close parallels. Thus, Fig. 22 of Langton Bay has a pair of holes instead of the slot for the socket binding and has a single end barb. Such sockets occur at Southampton Island and Ponds Bay³ and again at Smith Sound.⁴ That it is not entirely unknown in Greenland is clear from Solberg's Fig. 51.⁵ The place, however, where this feature is particularly in evidence is Southampton Island from where we have archaeological material comparable to the Stefánsson collections. Whatever the inter-

¹ Bogoras, Waldemar, "The Chukchee—Material Culture" (*Memoirs, American Museum of Natural History*, vol. XI, pt. 1, New York, 1904), 116.

² Mason, Otis T., "Aboriginal American Harpoons" (*Report, U. S. National Museum*, Washington, 1900).

³ Boas, Franz, "The Eskimo of Baffin Land and Hudson Bay" (*Bulletin, American Museum of Natural History*, vol. 15, part 1).

⁴ Kroeber, A. L., "The Eskimo of Smith Sound" (*Bulletin, American Museum of Natural History*, vol. 12, art. 21).

⁵ "Beiträge zur Vorgeschichte der Ost-Eskimo" (*Videnskabs-Selskabets Skrifter*, II, Hist.-Filos. Klasse, Christiania, 1907.)

pretation, the fact is that a greater similarity in this respect exists between the harpoon heads from old sites in Siberia, Alaska, and the Hudson Bay district, than is found in more modern ethnological collections.

When we turn to the type of head presented in Fig. 1 from Birnirk, we find no particular differences from the other sites except in one possible feature. At Birnirk the blades in this type are set at right angles to the line hole, while at Cape Smythe they are the reverse. In the modern Alaskan collections the Cape Smythe form prevails. Yet, the other type of Birnirk head we have described had the blade in the plane of the line hole. As to other features it should be noted that upon this type (Fig. 1) is to be found nothing like the scheme of decoration in Fig. 3. This absence quite sharply differentiates these two types. Another point is that somewhat in contrast to the heads from the Hudson Bay region we have in both the old and late sites of Alaska and Siberia a single end barb for this type. It is true that in some cases the end is notched, but this is obviously a minor character when we examine heads from Southampton Island, Baffin Land, and parts of Greenland. The heads from the Langton Bay district are in this particular like those of Alaska as also are those collected on Coronation Gulf. A similar barb is found in parts of Baffin Land and even at Smith Sound, but at Southampton Island and in Greenland we have almost exclusively a distinctly two-barbed head which is also found in the localities just noted.

Another point of difference is that the heads from Southampton Island, part of Baffin Land, and Greenland have the line hole passing through the under side of the head shaft and in some cases a pair of holes passing through to the upper surface. At Smith Sound this feature appears on so-called whaling heads in contrast to the western method on their seal and walrus heads. Also, these whale heads at Smith Sound have the double end barb previously noted. As to whale heads themselves we may note that Fig. 18 from the Franklin Bay district is a close parallel of the Alaskan type but farther east we have a different type of whale head. (An unfigured specimen from Okat is still nearer the Alaskan form.)

As Thalbitzer has noted (p. 432) the type of Fig. 1 is one of the simplest forms which extends practically without a break from Siberia to Greenland, the presumption being that it is one of the most fundamental, if not one of the older, forms. We now have outlined for us a very nice problem: can we by analytic methods so correlate the data at hand as to make a good case for the identity of the original type of Eskimo harpoon?

The mechanical principle in this harpoon head is clear, it being in reality a toggle. The first problem, therefore, is to furnish one end with a penetrating point such as will carry the whole head under the skin of the seal or

other sea mammal. The next point is to make the head turn at right angles to the line; this is the function of the end barb and accounts for its being set at a more or less acute angle to the longitudinal axis of the head. To have a toggle harpoon at all you must have these essential parts, a blade at one end, a line hole at the middle of the head, and a pointed end. It is clear that this definite mechanical concept has passed along over the whole stretch of Arctic Coast from eastern Siberia to east Greenland. We have also noted how one definite external form of head embodying this concept has been found throughout the same area. This may well be the simplified form of the invention resulting from the corrective effects of continued use all along the line or it may be the original form from which the others have deviated.

Taking into consideration the conditions of life on the greater part of the Arctic Coast, it is difficult to conceive how a people could have lived at all without this device; hence, it seems vastly more probable that the harpoon concept was carried along by the first immigrants rather than diffused. Yet, it is clear that secondary features of the harpoon could subsequently be diffused more or less completely. Further, the carrying of the concept by an expanding population would not require universality of detailed form in which there is a great range of possibilities. The fact that these are possible and probable makes it clear that in the absence of historical or stratigraphic data, no definite conclusion can be reached. We can only point out that there is one unvarying toggle-like harpoon concept and that there is also one specific mechanical form found throughout the entire range, but its relative frequency varies with the intensity of development in localized forms. West of Hudson Bay it dominates, but east of that point it is decidedly in the minority. Also, we believe that the peculiar open socket is more prevalent in material from old sites and, in so far as it goes, indicates a greater similarity between them.

Another point is that as one looks at the different harpoon heads he gets the impression that the forms of end barb, for example, have about exhausted the range of possibilities within the limits of the fundamental concept. If this is correct, we should then expect the localization of any given variant to be a matter of accident but its subsequent diffusion would be susceptible of an historical interpretation.

Directing our attention to harpoon shafts and their accessories, we note that a pointed butt or ice breaker is rarely found around Hudson Bay and to the eastward not at all. In Alaska such butts are practically universal and our material from Franklin Bay contains many of them, also they are noted in the collections from the Eskimo of Coronation Gulf. The manner of joining the ivory or bone socket for the foreshaft is well shown by the

illustrated specimens from Point Barrow and other sites. These methods are rarely found east of Hudson Bay.

The long arrow-head with barbs on one side so numerous in our archaeological collections does not occur with equal frequency among the Eskimo of Hudson Bay and eastward. The modern Eskimo of Alaska and as far east as Coronation Gulf use them almost exclusively, but in Baffin Land, for example, they are rare, though not unknown. In fact, the bow itself is most used in the regions accessible to growing wood and gradually dwindles out between Hudson Bay and West Greenland. However, this may be a modern trend, due to white influence. The peculiar arrow-head referred to above is found among some of the northern Déné tribes but is rare in Siberia. Some of the Alaskan forms are strikingly like the prongs on a bird spear and may have developed from it.

Incidentally, this study gives opportunity for comment upon a subject of current interest. In the *American Anthropologist* for January, 1915, Porsild discussed the screw as employed by the Eskimo, claiming it as an old and independent invention. In the succeeding issue of this journal, Laufer reviewed the former literature on the subject and took the position that its independent origin among the Eskimo was far from proven. When it is recalled that we are here dealing with the most extensive collection of Eskimo archaeology yet reported, any observations upon the occurrence of the screw device are worth recording. With one exception all the instances of screws we have noted are in a few new looking surface pieces. This exception is from Birnirk and the specimen is so broken as to obscure its use, but we infer that it was ornamental. Yet, since this is our oldest site, we must conclude that the idea of cutting a spiral was known at that time. On the other hand, this is the only case and whereas in our collections from the living Eskimo we find a screw attachment in shaft joints and similar ones in our surface specimens, it still remains true that in all our series of objects the old sites give no examples of a screw joint. In these discussions of the screw it is well to note that the mere idea of cutting a spiral does not necessarily involve the mechanical concept of a screw. Thus, since the single Birnirk example gives one the impression of being merely ornamental, while the modern Eskimo examples are of the other kind, we must conclude that so far as the Stefánsson data go, the evidence favors the recent origin of the screw joint in the west.

Porsild, however, considers the small spurs we have noted on the tangs of darts (Fig. 27) to be parts of a screw thread and figures some together with others having screw tangs. This grouping lends a certain plausibility to his interpretations, especially since in his figured specimens the spurs are diagonally set. Now, it so happens that we have in the Stefánsson

collections a large number of darts bearing these spurs, from which it should be easy to form a fair estimate of the justification for such an interpretation. As a test case, we took the darts from Point Barrow and found them to run as follows:—

No spurs	17
Spurs opposite	38
Spurs diagonal	15
Circular shoulder	16
Broken beyond recognition	13
<hr/>	
Total	99

In short, the intent of the makers of these darts seems to have been to place the spurs in the same horizontal plane and those that appear as diagonal are accidents. Again, the occasional circular shoulder or ridge around the tang is horizontal and not cut as segments of a screw thread. The darts from the other localities studied are similar. Hence, we conclude that among the tangs for darts west of Hudson Bay the presence of a screw joint is not so far apparent. Porsild's Greenland material shows the use of screw threads upon similar darts, but it seems fair to assume that this is a localized form, the antiquity of which remains to be demonstrated. Further, we must question the interpretation of even the diagonal spurs in Greenland specimens as parts of screw threads, since spurs in general are found throughout the whole Eskimo range. The natural conclusion would be that the more widely distributed spur is by far the older form and the restricted screw the more recent. The empirical result is that the entire Stefánsson collection offers no example of the screw joint for darts. It occurs only on a very few ivory sockets for lances all of which are freshly cut and reveal no traces of weathering or earth stains.

Taking a wider view of the subject we recall that the usual custom is to roughen the tangs to bone instruments by hacking. We have examined many specimens showing such hacking and rarely found the cuts deviating from the horizontal, but occasionally one that is so cut as to simulate segments of a screw thread. In conclusion, the evidence in our old specimens can be comprehended as to simulate the surface by hacking, (b) the use of spurs. The gr when we turn to implements of when all three were in use. T for assuming an historical rela for some Greenland darts.

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